

**SUBMARINE PILOTING NAVIGATION TRAINER (SPAN), DEVICE 15F12A****TRAINING CATEGORY:**

RADAR (AEW/Navigation))

**ORIGINATING AGENCY:**

NAVSEA

**SECURITY CLASSIFICATION:**

Device 5F12A is unclassified.

**PURPOSE OF DEVICE:**

To provide dynamic realtime team training in at-sea electronic navigation and in restricted waters piloting procedures and techniques; and use of the TRIDENT Type 8L MOD (T) Periscope Set.

**INTENDED USE:**

For training operational submarine navigation and piloting teams, operational plotting teams and submarine watchstanders.

**FUNCTIONAL DESCRIPTION:**

Device 15F12A is made up of a Periscope Station, a Novoview SP-2 Visual System, together called the Periscope Visual Scene Generator (PVSG), and a digital landmass and target simulator. Provisions are provided for the instructor/operator to initiate, control, monitor, and record training exercises.

The Periscope Station simulates the optical and optical control functions of the TRIDENT Type 8L MOD (T) Periscope Set.

The Novoview SP-2 Visual System provides a computer controlled scene upon a monitor screen. This scene is viewed by the instructor and the trainee and made to change in accordance with the focusing, elevation, bearing mark, magnification and relative bearing controls on the Periscope Station or directions from the instructor's console.

The digital landmass and target simulator produces video signals representing radar echoes from surface targets and land features for display on operational azimuth-range indicator units

## DIRECTORY OF NAVAL TRAINING DEVICES

(AN-SPA-25). The trainer also generates ownship motion signals to activate a Mark 19 Mod 12 Plotters and ancillary digital displays and indicators. Tactical environment databases include five (5) navigable harbor and coastal areas (Charleston, SC; San Francisco, CA; Pearl Harbor, HI; Norfolk, VA; and New London, CT) and open sea areas.

The trainer consists of a Radar Display Generator, Unit 1; Computer Station, Unit 2; Indicator Station, Unit 3; Plotting Stations Unit 4 through 7, 14 and 15; Radar Operators Stations, Units 8, 9, and 17; Navigation Operators Station, Unit 10; Fathometer Station, Unit 12, O.O.D. Station, Unit 13; the Digital Dead Reckoning Analyzer (DDRA), Unit 16, and the Periscope Operators Station, Unit 11.

## PHYSICAL INFORMATION:

**Number of Pieces:** 39

**Sizes:** (H" x W" x D")/Weight (lbs):

Unit 1 - 77.5 x 56.13 x 37.5/1612

Unit 2 - 71 x 25 x 34/2470

Unit 3 - 56.5 x 68.19 x 47.5/1055

Unit 4-7, 14 & 15 - 42 x 39.5 x 51/30

Unit 8, 9, 17 - 58.5 x 20 x 48/235

Unit 10 - 38.5 x 20 x 24/125

Unit 11 - 80 x 70 x 32/2569

Unit 12 - 5 x 8 x 6.06/10

Unit 13 - 19 x 22 x 7.37/40

Unit 16 - 53 x 21 x 25.1/1400

**Total System - 11,626 (EST)**

## OPERATIONAL EQUIPMENT:

**Plotter:** Mark 19, Mod 12 - Six (6) Plan Position Indicator, AN/SPA-25E (Modified)

## EQUIPMENT REQUIRED (NOT PROVIDED):

Drafting and Navigation Kits, Slide Rule, Protractors and Parallel Rulers, Chart Table, Maneuvering Board, and Papers.

## POWER REQUIREMENTS:

120/208 VAC, 60 Hz, 3-Phase, 12 KVA  
120 VAC, 400 Hz, Single-Phase, 2 KVA 115 VAC,  
400 Hz, 10 at 15 Amps

## PUBLICATIONS FURNISHED:

1. NAVTRADEV P-4947, 1-12 Technical Manual, Maintenance Instructions (U)
2. NAVTRADEV P-4949, 1-through 9, Computer and Peripheral Equipment Documentation (U)
3. NAVTRADEV P-4948, Planned Maintenance System Documentation (U)

## PERSONNEL:

**Instructor:** One (1) E7 or O3 Per Shift

**Operator:** Instructor Operated

**Trainees:** One (1) OM or ET

## CONTRACT IDENTIFICATION:

Radar Landmass System

Manufactured by AAI Corporation, P.O. Box 6767, Baltimore, MD 21204 under NAVTRASYS-CEN Contract No. N61339-80-C-0083.

Periscope Station

Manufactured by Kollmorgen Corporation, Electro-Optical Division, Northhampton, MA under NAVTRASYS-CEN Contract Nos. N61339-80-C-0037 and N61339-86-C-0025.

Novoview SP-2 Visual System

Manufactured by Evans & Sutherland, Salt Lake City, UT under NAVTRASYS-CEN Contract Nos. N61339-80-C-0025 and N61339-86-0024.

## LOCAL STOCK NUMBER:

6940-LL-C00-5208